THE

SOUTHERN AGRICULTURIST.

DECEMBER, 1835.

PART I.

ORIGINAL COMMUNICATIONS.

On Premiums.

To the Editor of the Southern Agriculturist.

Sir,—Our Societies for the promotion and improvement of cultivation in field and garden, frequently devote a portion of their funds, and lend their countenance to the encouragement of cattle-shews, ploughing-matches, and horticultural exhibitions. The greatest practicable benefit is not derived from these meetings, as at present arranged. The ardour of competitors is stimulated by the offer of medals and small pecuniary premiums. In the first of these motives there is a childish vanity, calculated rather to quell than excite to more eager contests, the generous emulation which is the basis of well regulated feelings upon such occasions, and the last motives are inefficient to the class of competitors in this quarter.

After censuring the plan now pursued, your readers conjecture that they are about to receive a disclosure of some projected improvement: they guess truly, and this is our scheme.

Let the fund destined for premiums be devoted to the importation from abroad, of rare varieties of seeds, plants, trees and implements, and let these be the premiums for excelling in cultivation. That these would provoke to a

livelier competition, and include a more numerous body of competitors, is equivalent to saying, that they would produce a more diffusive benefit than our present meagre list; and no pains shall be wasted upon the argument where the truth of the proposition is manifest. We will confine ourselves to a particular application of our hint.

Suppose that our Agricultural Society were to despatch to our patriotic envoy at Belgium, a liberal sum to be disbursed under his direction, at the nursery of the venerable Professor Van Mons, of Louvain; and that the purchases should be directed chiefly to valuable young fruit trees. And suppose that our Horticultural Society should designate appropriate objects in their department to be imported from the collections of Knight. We answer for it that a new spirit would be given to the Agricultural and Horticultural shews here, when the distribution of such importations as prizes comes to be proposed.

Besides the direct benefit to be afforded by the introduction of choice fruits and vegetables, the very premiums themselves will supply objects of future experiment and competition.

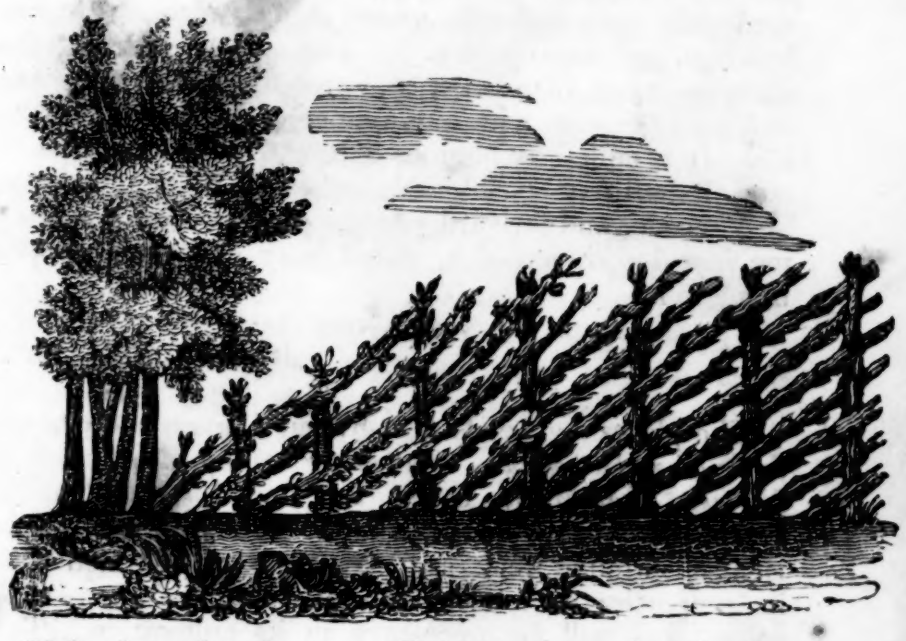
And finally, when one foreign collection or country is exhausted, another may be tried, so as to keep up an ever fresh interest in this department Q.

A Cheap Pasture Fence.

To the Editor of the Southern Agriculturist.

Sir,—Among the different means of making inclosures, I have seen no notice taken of the Chinquepin, as suitable for making hedges in the Southern States. I beg leave to suggest, that it appears to unite many advantages, and to be subject to few of the objections, to the different plants recommended for live fences. It would probably acquire in twelve months a sufficient growth to confine cattle. Its growth after that is very slow, the wood is very durable and throws out numerous suckers from the roots. If plashed or wattled in this stage of its growth, it would probably continue a life time, with little or no repair. The mode of plashing is so simple that any country negro can do it, if once directed by his owner. It is simply to leave every third stem an upright shoot, and bend the two intermediate shoots, always one way,

so as to interlock and be wattled in with the upright stem, thus:



If the branches be not sufficient to keep them in that position, they may be tied with a strip of their own bark in their proper places. As this is the season for the ripe fruit, I recommend that they be strewed in a line where the fence is wanted, on the surface of the ground, and covered with damp leaves: I believe that they would grow better in this way than sowed in trenches, and be less likely to rot. The suckers may likewise be grubbed up, and set out in the winter for a permanent fence. No hedge should be set out on a ditch or bank, as it would suffer for want of water and support to its roots.

Z.

October 20th, 1835.

Species of Trefoil or Clover.

St. Augustine, October 26, 1835.

To the Editor of the Southern Agriculturist.

Sir,—I send for your inspection a species of Trefoil or Clover, which I do not know the exact name of, but find that horses and cows both very greedily devour it. It grows wild in several parts of Florida, in the old fields around St. Augustine, at Matanrasor.

It rises from three to five feet high, can be cut several times, as I found by cutting it down as a weed, it immediately sprouted with many shoots again, but grew less high and more bushy. It is an annual, and from the immense mass of foliage, and growing so freely on *any* soil, may become, with attention, a useful food for cattle, &c. It is called by negroes Sweet Weed, why, I know not; I shall pay considerable attention to its cultivation next season, and forward you the result. Can you give me any description of it, that I may apply the proper name to it.

I am, Sir, your's, very obediently,
JOHN LATHAM.

The plants and seeds sent by our Correspondent, are those of a *Hedysarum*, answering to the description of *Nuttal's Hedysarum, Lævigatum*, and is described in Elliott's Botany, (Vol. ii. p. 215.) It is said to grow in rich soils around Beaufort. We are not acquainted with its properties as fodder for cattle. Being an annual, some care will be necessary in its cultivation. The leaves drop very easily in drying. It would be advisable that our correspondent should make some experiments, to ascertain its fitness for provender; but our Southern country abounds in so many varieties of native grasses, the utility of which for cattle food has been so fully tested, that we think that it would be more profitable to cultivate them than the one in question. In this country we want experiments made as to the best method of curing our provender; nature cultivates it rapidly enough for us; we have nothing to do but to gather and cure it. In the latter we are sadly deficient. The neighbourhood of Charleston alone, could supply her market with numerous tons of hay annually, yet we are satisfied to pay for the Northern article from 125 to 150 cents per hundred, and we believe the present season more; whilst we gather and dry (not cure) a few acres of grass for domestic purposes, forming a material that is devoid of nutrition and otherwise worthless. Farmers on the Neck, and in the neighbourhood of the City, where the transportation would not be too great by devoting themselves exclusively to the culture of our indigenous grasses, and preparing hay for market in the Northern style, would find it an object worthy of attention.

It would not interfere with the cultivation of many other articles for market; and it is not an exhausting crop, but on the contrary, enough vegetation is always left after the last mowing to return something in the shape of manure. We should be glad to see the day when bales of Carolina hay should be drayed through our streets to the numerous large livery establishments that prosper in our city. It would not take long to wear off the prejudice against our home provender, which has arisen from negligence or want of skill in the preparation of it; care and attention can obviate this, and now, that Charleston is emerging from her days of adversity, a new spring will be given to action and enterprise, and all who are disposed to avail themselves of the advantages that her prosperity will insure, may partake largely of it.—*Editor.*

Hooks in Horses.

To the Editor of the Southern Agriculturist.

Sir,—Although the best writers on the veterinary art do not recognise such a disease in the horse; your subscriber from Appling, in Georgia, and Commodore Porter from Constantinople,* each relates the almost instantaneous relief afforded to their sick horses, by the very common operation of cutting off part of the third eyelid; the one calling it, according to the Asiatic nomenclature, *bone eye*, the other to the vernacular, *hooks*.

These gentlemen, like many other persons, were deceived, and made to mistake the effect of cold, or of some other inflammatory state of the patient for a disease of itself—nothing is more common. I myself recollect five cases of tetanus which occurred in the summer of 1820, not one of which but would have been called a case of hooks by the advocates of that doctrine. The first was that of a gelding in my own yard, attended by the veterinary surgeon, Dr. Carver. A negro who was in the habit of cutting off the hooks, was anxious to perform the operation. I did not consent: the horse died of violent spasms.

The second was that of a stallion, belonging to Dr. Joseph Glover. Dr. Carver attended it, and performed the operation for the hooks—The patient was cured.

* See American Turf Register for September, 1835, and your work for October, 1835.

The third was that of a gelding, the property of Col. Bryan. Dr. Carver attended this last case, and performed the operation; the patient died.

The fourth was that of a small mare, opposite to my residence; the operation for the hooks was performed in a very early stage of the disorder: this case terminated fatally.

The fifth was that of a stallion of value, the property of the late Major Manigault, whose tetanus was produced by the puncture of a nail in the foot; it was treated by an eminent surgeon, who exhibited opium in large doses, and saved the life of the horse. I saw the case, and assert that no hooks doctor would have left this horses' eyes untouched. Thus out of three cases in which the operation was performed—one was saved—and out of the two where no operation, one was also saved.

For better information on this subject, I quote from the *Preliminary Treatise to the Library of Useful Knowledge*, published in London, under the superintendance of Lord Brougham and others, the most Scientific persons in Great-Britain. The Treatise is on the Objects, Advantages, and Pleasures of Science, and attributed to the pen of Lord Brougham.

After having described the eye of the bird, the author says, at (p. 30.) "A third eyelid of the same kind is 'found in the horse, and called the *haw;* it is moistened 'with a pulpy substance (or mucilage) to take hold of the 'dust on the eyeball, and wipe it clean off, so that the 'eye is hardly ever seen with any thing upon it, though 'greatly exposed from its size and posture. The swift 'motion of the haw is given to it by a grisly elastic sub-'stance placed between the eyeball and the socket, and 'striking obliquely, so as to drive out the haw with great 'velocity over the eye, and let it come back as quickly. 'Ignorant persons when this haw is inflamed from cold 'and swells, so as to appear, which it never does in a 'healthy state, often mistake it for an imperfection, and 'cut it off; so nearly does ignorance produce the same 'mischief as cruelty! They might as well cut off the 'pupil of the eye, taking it for a black spot."

I should be glad if any thing I could say through the medium of your useful work, could prevent in any instance those two very common, very cruel, and unneces-

sary operations on the horse—I mean cutting for the *hooks* and burning out the *lampus*.

JAMES FERGUSON.

Charleston, November, 1835.

Tinning of Lead Pipes.

To the Editor of the Southern Agriculturist.

Mr. Editor,—"*Galena*," is mistaken in thinking that the tinning of lead pipes affords no protection to those using water drawn through them, from the deleterious effects of the lead.

How do the common leaden pipes decay? It is by the washing away of the oxide of lead each time that it is formed, thereby not leaving any on the surface to protect it from the further oxidation of the metal. The pipes must decay from the inside, for the outside not being "in contact with the atmospheric air," no oxide would be formed; or allowing it to be formed with the small quantity of air in the earth, it remaining on the surface, would serve as a protection from the further decay of the metal. It is thus that the pipes decay so rapidly, that the water drawn through them is so injurious, so that we see that whatever would preserve the pipes, would also prevent the oxide of lead from being formed, and thus protect those using them from its poison.

As I understand the process of Mr. Ewbank, the pipes are coated on the interior as well as the exterior.* If they are coated on the interior it would not be "changing one poison for another," for the oxide of tin would not be formed. Silliman says of tin, "*but slowly altered by air*, either moist or dry, it preserves its splendour for years, but is eventually tarnished.† Of lead, he says, "easily tarnished in the air."‡ "Tin is not oxidized at common temperatures, even by the concurrent presence of air and moisture."§ "It (lead) is slowly oxidized, also, by exposure to the atmosphere at common temperatures; and more rapidly, when exposed alternately, to the action of the air and water."‖ "It (tin) resists the action of air."¶ It (lead) soon tarnishes in the atmosphere."**

* I have, since writing the above, learnt that the pipes *are* coated on the interior, but I am not certain whether or not they are on the exterior.

† Elements of Chemistry, vol. ii. p. 230 ‡ Ib. p. 239. § Henry ii. p. 40.
‖ Henry ii. p. 104. ¶ Accum. ii. p. 71. ** Ibid. ii. p. 63.

The reason why an alloy of tin and lead, or pure tin is not made into pipes, is, that the high price of tin would make the cost of the pipes more than, in general, their utility would balance.

Silliman gives the alloy, three parts of tin and one of lead, but says, that it may contain "thirty-three or fifty per cent. of lead without yielding it to vinegar." Allowing equal parts of lead and tin, the cost of the pipes would be double, perhaps treble that Mr. of Ewbank's, which is the reason of the value of his invention.

The caution which "*Galena*" gives to those using leaden pipes, is perfectly correct, and should be followed by all.

Yours,

JUVENIS.

Protecting Cabbages from Worms.

To the Editor of the Southern Agriculturist.

Mr. Editor,—In a conversation with a friend of mine some time ago, upon Horticulture, he stated to me that his cabbages having suffered very seriously from vermin, particularly of the caterpillar kind, he was induced to try a remedy suggested by a neighbour, which was not to make his beds very large, and to sow *hemp* around the edges of them; this he tried and found it to succeed admirably. Those of his neighbours who did not use this precaution had their cabbages nearly destroyed. He thinks that it would be well to extend it to all kinds of plants infested by vermin. This must arise from an aversion these insects have to the hemp, or that birds being fond of perching upon it, the insects are brought to their view and destroyed by them. This is so simple and expedient, that it would be desirable that some of our Horticulturists should make the experiment, and furnish you with the result. Simple remedies are frequently most certain, but unfortunately, the human mind is so charged with subtilty and mystery, that we seem not to appreciate any thing new, unless involved in one or the other of them.

S.

Calculations for Measuring Corn.

Riceborough, (Geo.) October 22, 1835.

To the Editor of the Southern Agriculturist.

Dear Sir,—In your October Number, you gave the following plan for measuring a Binn of Corn.

Binn, 14 feet length,
Multiply 17 feet wide.

98
14
238

Multiply 7 feet deep,

1666

Multiply 4 cubic,

Divide 5)6664

½)1333 in the cob,

Nett 666 bushels.

I will give you a similar one used by one of my neighbours.

Binn, 14 feet wide,
Multiply 17 feet long,

98
14
238

Multiply 7 depth,

1666

Multiply 8

½)1332(8 strike off the right hand figure,
666 Nett bushels,

My own plan is plainer than either of the others, and I think, therefore, preferable.

Binn, 14 feet wide,
Multiply 17 feet long,

98
14
238

Multiply 7

Divide by 5)1666

333 subtract the quotient from the dividend.

Divide for cobs by ½)1333

Nett 666 bushels.

If you think the above would be instructive or amusing to any of your subscribers, you can give it a place in the Agriculturist. Perhaps some would like to know why the different methods produce the same result. B.

On the use of Tan for the preservation of Fruit Trees.

To the Editor of the Southern Agriculturist.

Mr. Editor,—You have detailed in your very valuable and instructive journal, some remedies for the protection of fruit trees from the hordes of insects that depredate upon them. Some of these are no doubt efficacious, all cannot be, because if a specific for their destruction could be discovered, all other remedies would be superseded by it. Among those prescribed by your several correspondents, I do not perceive any notice of the efficacy attributed to tan. Mr. Gates of Petersham, who claims the discovery, has furnished the Editor of the *American Farmer* with a full account of the process, and has given the testimony of his neighbours, to its ample and complete success. This gentleman had discovered that his fruit trees, particularly his pear, peach and plum, were in a decayed state; the idea occurred to him to apply a small quantity of tan to their roots. His expectations were more than realized, his trees revived, and in the next season he entered more largely and fully into the experiment. His trees bore evident marks of great improvement. He thinks that tan about the roots loosens and prepares them for the reception of more nourishment and transmission of it to the trunk and branches, which invigorating the tree, enables it to resist any disease that may attack it. But the value of this application manifested itself, particularly in preventing the approach of those deleterious insects that prey upon the vitality of the tree itself. Those trees of his which were prepared with tan, have been entirely free from the ravages of caterpillars, cankerworms, grubs, and other insects that harbour in them. Those that were not treated in this manner, have been seriously injured by the common enemies to fruit orchards, who always avail themselves of the negligence of the orchardist. Tan was found to prevent the black gum from oozing from the trunks and branches of the trees, arising no doubt from the absence of insects, and the consequent freedom of the tree from punctures. The damson plum and peach trees, suffered more from gum, than others, resulting as he thought from the constitutional weakness of the tree, or some other cause removable by the application of tan. The true reason, I

think, will be found, if he is correct in his views, of the destructive influence of tan to the insects that infest the trees, is that by destroying them the tree escapes from being wounded, and no means left for the gum to gather and issue forth, which it invariably does at a wound in the bark and no where else. Previous to this application of tan, his trees were feeble and diseased, those of his neighbours were also in the same state. Every person who has examined the trees, at different periods, has witnessed the favourable result. They are now healthy, flourishing and vigorous, whilst those of his neighbours, which had not the benefit of tan, are either dead or in the last stages of decay. The fruit was not only greatly increased in size and quantity, but the flavour greatly improved. Mr. Gates states a remarkable instance of the wonderful effect of tan in restoring a decayed pear tree that stood in his garden, to health and vigour, which for six or seven years before had been almost lifeless, having upon it but one or two green branches, the rest being dead. After the tan had been tried in the course of a year or two, he was astonished to find new branches shooting out from the trunk, and that it became the most flourising fruit tree on his farm. This fact, he says, can be attested to by hundreds. His plan is to renew the tan about the roots every two years, giving them from half to two bushels each, according to the size of the tree. This is certainly a very important discovery as it is not only the application to a useful purpose of an article deemed of little or no value, but within the reach of almost every one disposed to make trial of it. Its efficacy, I have no doubt, arises from the destruction of insects by its pungent and acrid quality, and that the gallic acid in it, nourishes and keeps the bark of the tree in a wholesome and healthy state. Many persons become disappointed if their trees fail in the production of good fruit, and change them frequently without benefiting in the result; it will be found, that this arises either from total negligence, or injudicious management.

I have seen persons totally unskilled undertake to trim and prune their trees, in a manner that rendered disappointment inevitable, by cutting off those branches which are to bring forth, leaving those that have performed their functions totally untouched; others, again, do not trim or prune at all, being anxious that a twig should not be

lost which might bear a peach or two; this is in the other extreme, and calculated to prevent the formation of good solid wood where it is wanted, keeping the tree diminitive and slender, rendering it worthless, and fit only to be "hewn down and cast into the fire." I have paid considerable attention to this subject, and have a number of very fine peach trees, bearing the best fruit. I have invariably found, that in proportion to the excess of fruit a tree bore, the size and quality diminished, and that as little fruit as possible ought to remain on those shoots attached to small branches, intended for limbs. I have always been amused when I have been shewn a peach tree, and the owner directing my attention to the fact of his fruit hanging like grapes, and a half dozen props to prevent the tree from splitting in as many directions. One hundred good peaches would have been infinitely more desirable than the five hundred that crowded the tree. The season has now arrived when our attention should be directed to putting our fruit trees in order: after a good fall of rain, and when the bark is moist, the black sooty-like substance that covers it should be scraped off carefully with a dull iron instrument, this will exhibit the bark of a clean copper colour. This black stuff which is thus removed, is nothing more than dust, which has fixed itself on the tree as soot does in a chimney, the tendency of which is to close the pores of the bark, to prevent the exercise of its functions, and form the recepticle of numerous insects scarcely discernable to the naked eye, but which can be discovered by simply scraping some off with the finger nail and examining it. The bark being thus cleaned is to be kept so, by washing it as occasion may require with a solution of soap and with sand, which must be washed off with clean water. No oily or tarry substance must be suffered to remain on the bark, this would render the destruction of the tree certain, therefore, in all cases, this would result from oiling a tree. The simple direction I would give would be to clean the exterior of the tree in the manner I have described, and although I have not had a chance of trying the tan, because I did not know of it, yet from the high authority whence it is derived, and the testimony of hundreds of respectable persons, I would recommend by all means the application of it. I shall make the experiment with some of my trees, so as to test it by comparing them with

those I shall treat in the ordinary way. I wish some of your readers would co-operate with me in this experiment, particularly those residing on Charleston Neck, and favour you with the result; I shall do so for one. It would be a great *desideratum*, to discover some process by which good peaches could be procured on the neck. There is something in the soil or atmosphere, or perhaps, a combination of both, that has hitherto baffled all efforts on this point in that region; indeed, I believe, many endeavours have not been made; the work appears to have been given up in despair; it is, therefore, peculiarly desirable, that new attempts should be made by this process, and even if this expedient cannot drive away that most infernal pest the *curculio*, the general health of the tree may be improved, other insects that infest the roots may be driven away, and we may enjoy a few good peaches, where now we do not get a single one.

FRUCTUS.

On Improving Wine.

To the Editor of the Southern Agriculturist.

Mr. Editor,—Carolina has long been famous for the extraordinary excellence of her wine, we do not mean that produced *by* her vineyards, but that produced *at* her luxurious tables. With a view of enabling your readers to make an experiment in improving or mellowing their wine, and hurrying on it premature old age, I will give you the plan of M. S. T. Von Sœmmering, a Dutch Chemist of great celebrity. The facts detailed are the result of experiments made by him, and reported to the Academy of Science, at Munich, in the year 1814. The experiment was made upon the Red Rhenish wine of the country, but I apprehend the principle upon which the effect depended, will obtain in all other wines. In December, 1812, he took 4 ounces or about a gill of the wine of the growth of 1811, and put it in a common glass vessel 3½ inches deep and 2 inches wide, which was covered by having prepared bladder steeped in water, so as to make it soft, tied over it. This vessel was placed in a common sitting room out of the influence of the sun; the spaces described by two and four ounces were marked on the outside of the glass; when the liquor had fallen to the second line, indicating that two ounces had evapo-

rated through the bladder, which took place in 81 days, the following observations were made upon it.

1. That it was neither mouldy nor mothery, as it would have been if left uncovered, or even stopped with cork for that length of time, in the same kind of glass, and in the same situation.

2. Dry crystaline crusts or pellicles were perceived floating on its surface. These were found to be ordinary cream of tartar.

3. Cream of tartar precisely similar to the above was also found at the bottom of the glass.

4. The wine was of a darker colour, yet brighter and finer than the same sort bottled in the customary way.

5. In smell, its odour was stronger and more enticing than that of the same wine ordinarily bottled.

6. In taste, its flavour, though more spirituous and aromatic, was still in another way, milder, softer, and more grateful to the palate, or in a word mellower than that of the other.

7. Its proportion of alcohol was one half greater than in the ordinarily bottled wine of the same growth.

Wine thus concentrated was afterwards submitted to closer tests, and the experiments repeated on other and different kinds of red wines, and the result was always the same.

The rationale he deems to be as follows:—that the fact of water escaping through the dried bladder had been long known, but that it did not admit an equally ready passage to alcohol, therefore, the aqueous portion of the wine escaped, whilst that of the spirituous only partially. This process, I think, can be very easily understood. The water contained in the wine evaporates, and not being able to escape, fixes itself to the bladder, moistening it entirely through, having no impediments after it reaches the exterior surface of the bladder, it thence readily evaporates, a new supply is furnished through the bladder from the interior, and the same thing takes place, until the supply becomes exhausted; in the experiment above detailed, the bulk of the wine was reduced one half. In this process, a very small portion of the alcohol escapes, because the bladder absorbs this liquor very imperfectly.

In the experiments of Von Sœmmering, he says, that there was no extraneous alternative used in the treatment

of the wine, but it was permitted spontaneously to rid itself of the coarse and sour salts by the evaporation of the water which held them in solution. Wine standing upright in a half empty bottle, either open or ever so well corked for several weeks, will spoil; by closing the bottle with bladder, wine, under the same circumstances, may be preserved for a year together, red wine was tried in this manner, but we may infer the same result from any kind. We may be sure, he asserts, that in a few year's time, the quantity of half an ounce will not be wasted, if the mouth of the bottle be of ordinary size, and the remainder so far from being injured, greatly improved, which shews that dried bladder is a much better guard to wine than dry cork. He infers that the mellowness acquired by wine when kept in the cask, and ascribed to age, is an effect of the same cause, the wood being porous, enables the watery particles to evaporate, and to deposite its salts on the side of the cask. The spirituous particles of the wine may rise at the same time to the inner surface of the bladder that the aqueous do, but meet with an opposition to their egress that the latter do not experience, which clearly evinces that bladder is a substance well adapted to separate the spirituous from the aqueous particles. In keeping wine in casks, fresh wine must be added to supply the waste, to prevent the whole from spoiling, because the wood lets out the alcohol which preserves the wine, at the same time that it does the water. Bladder does not. Bladder also keeps out the atmospheric air, so as to prevent fermentation and forming vinegar; the dry staves of an empty cask do not effect this. The degree of improvement which is induced in wine by the above treatment, is said to be equal to that induced in the cask in twelve years. The shallower the glass, and the wider its surface, the sooner the same effects are produced.

I have furnished to your readers, Sir, the details of Von Sœmmering, on the method of improving wines; that experimentalized upon by him, was red; my view is to endeavour to induce some of our wine connoisseurs, to make the same experiments upon the other wines commonly used in this country, such as Madeira, Sherry, &c., and let us know the result. A common tumbler may be used for the first experiment, the result of which might be ascertained in three months, the other may be made

in bottles, some of which I would propose to fill in the ordinary way, tied over with dried bladder; some filled in the same way and corked; others I would fill to the beginning of the tapering part of the neck, tied over the mouth with bladder, and others filled in the same way and corked, all standing erect. One year, it seems, is sufficient to ascertain the result. The bladder, I presume, may be prepared by suffering it to remain twenty-four hours in a solution of allum in water, and then dried.

BACCHUS.

PART II.

SELECTIONS.

On Chemistry, as connected with the developement and growth of Plants.

By the Author of the Domestic Gardeners' Manual; in a series of numbers, published in the London Horticultural Register.

ARTICLE SEVENTH.

Two subjects of importance remain to be considered,—namely, the *nature and operation of Manuring Substances*, and the *Preparation* of *Vegetable food*.

Of Manures, much has been written, far more than has been applied, or understood. The term is very comprehensive: it includes every species of refuse matter that is produced in the farm-yard and house, and the vegetable remains of the garden. I do not intend to particularise: my entire paper might be devoted, solely, to the arrangement of a list; and they who are curious in such things, are referred to the 6th Agricultural Lecture of Sir Humphrey Davy, or to the Encyclopædia of Gardening, article *manures*. It will suffice to state here, that every substance, which is decomposable into oxygen, hydrogen; with occasionally, azotic gases; and into carbonaceous black matter, or its compounds with oxygen and hydrogen, is, properly speaking, a manure, and may be resolved into vegetable aliment. The manuring substances of the dunghill, first claim attention; they have from the remotest time, been considered the very life of the farm and the garden: but much difference of opinion has existed concerning the state in which they should be applied to the land. Some, and indeed the greater number of practical men, have strenuously argued for the utility of letting the mass be reduced to the soft, adhesive condition of spit-dung: others, the Chemists particularly, have denounced the system of protracted fermentation, as wasteful and injurious; they have asserted the decomposition ought to be slowly effected *in the soil*, not in the heap; that—"it is better there should be no fermentation at all before the manure is used, than that it should be carried too far"—"The excess of fermentation tends to the destruction and dissipation of the most useful part of the manure; and the ultimate results of this process are like those of combustion,"—Davy.

For the purposes of the farm, the medium state adopted by Mr. Coke, appears to be in every way preferable. He forms his mixens, by layers of the several products of the cow-yard and byre, piggery, and stable: presses the heaps as much as possible, by carting over them,

and then covers the whole with a slight stratum of earth to retardthe fermentation.

The heaps are formed in winter, and remain thus, till within two or three weeks of turnip sowing; they are then turned over, and immediately carted to the fields.

For *the Garden*, where any superficial dressing is required to produce immediate effect, perfectly rotted manure, or good spit-dung, is most eligible; but the most economical process for works, on the large scale, and for permanent crops, would be effected by deep trenching with the spade, and burying perfectly recent farm-yard and stable dung, to the extent of four or six inches at the bottom of each trench, sprinkling the surface of the dung with Carbonate of Soda, or common Salt. Decayed manure might be dug in with the surface soil; and thus the ground would be enriched for first crops, and be in a state to receive, gradually, the gaseous products of fermentation from beneath, after a season or two, trenching would bring up the solid remains of the dung, and intermediately, nothing would be lost.

By a similar process, I have produced carrots and parsnips so much superior to those generally grown near me, that they have been admired by all who have seen them.

Decomposition produces attraction; the decomposing material ought, therefore, to be so situated as to produce the desired effect. Tap rooted vegetables require a deeply deposited substance, which, by its local attractive energy may induce perpendicular descent. Potatoes and tuberous roots, require lateral attraction; hence, the manure should be generaliy extended throughout the surface-spit of each. Fibrous rooted plants ought to find decomposable matter in every direction; and fruit trees should be supplied from above, to prevent deep-rooting, and to secure the lateral and almost superficial extension of the roots. Such are, I believe, the general principles which every gardener might safely keep in view, and observe as the ground of his practice.

But how do Manures act? The solution of this question involves considerations of the deepest interest in the science of gardening. It has generally been believed, that the soluble parts of manure are taken up by the vegetable organs; it has also been maintained that, the *carbon of the manure* is converted into carbonic acid, and that this acid, in a state of solution in water, is absorbed by the roots. Of late years we have heard much of *Humin*, *humic* acid, neutral *humates*, &c. which substances have been pronounced to be food of plants; and they are said to be found abundantly in the soft, adhesive mass of spit dung. I have stated my views upon the subject of Humin, in several articles which have appeared in the *Quarterly Journal of Agriculture*, and *British Farmer's Magazine*; and here, in a few words, I avow my decided opinion that, in the announced discoveries, we have obtained nothing, but merely a set of new names or terms, for that reduced nutritive substance, which every farmer and gardener has familiarly known from time immemorial, viz. the laborated, blackened mass of the dunghill. Humin, or reduced manure, is a compound of oxygen, hydrogen, carbon, chiefly; it may also contain azot, and some salts and earths. It is the product of decomposition, effected, when vegetable and animal matters are fully exposed *in a heap*, to the agency of solar light and atmospheric air; and it varies in its components, in as far as it is formed of substances whose elements may vary. Decomposition, effected by fermentation, is a process of *slow* combustion, and its results may be traced by exposing the substances which

would be placed in the dung heap to the action of direct fire. If these be distilled in glass or stone vessels, over a charcoal fire, furnished with recipient vessels for the proper retention of the products, a pungent and oily liquor will be obtained, which has a very disagreeable burnt odour, evincing traces of ammonia. Gaseous fluids are also abundantly given forth, abounding with carbonic acid, and carburetted hydrogen. These distilled products prove, beyond the shadow of a doubt, 1st, the presence of Oxygen and carbon to form the *Carbonic acid*;—2nd, that of hydrogen and carbon to form *Carburetted hydrogen gas*, and the *oily* fleeting particles;—3rd, that of hydrogen and azot to form the *ammonia*; and 4th, that of oxygen, hydrogen and carbon, to form an *acid liquor*, which, very frequently, is deposited in the first receiver. If the process be pressed till the matters in the retort cease to yield gases, and become red hot, the analysis of the blackened mass, will detect very compound products. Who, that is uninitiated, would suspect that in a portion of cow mamanure, dried, and distilled, and then heated to redness, would be found not only free charcoal, some salts: as sulphat of potassa—Carbonate of potassa, (pearl ash) sulphate and muriate of lime, and abundance of carbonate (chalk)? and yet these multifarious products, and several other substances, are discoverable in most of the residue of Vegetable combustion. In a word, this process, which is generally considered a work of destruction, terminates in a new arrangement of the vegetable elements, and produces matters which much resemble the staple earths that have been described in the last chemical article.

These facts irresistibly lead to the conclusion that, all manuring substances deposited in the ground, are eventually converted into earths, but in a way and proportion, varying according to the circumstances under which they are exposed, to the decomposing energy of the agents which surround them.

Before I enter upon the second subject of this article,—the Preparation of vegetable food—I must observe, for the information of those who cannot undertake an experiment, for the detection of the elements of fermentative substances, in close vessels, that any vegetable matter, if burnt, will afford satisfactory evidence of the earthy nature of the matters, left in the form of ashes. Let any quantiy of dry potato or pea-haulm, fern-leaves, bean stalks, tree leaves, or even wood be burnt, and the ashes collected; a drachm, or 60 grains will suffice for an experiment. First, put the ashes into a cup, then pour a quantity of boiling rain-water upon them: stir them once or twice, and, when cool, strain the liquor through paper. The soluble salts are contained in this, and they frequently exhibit alkaline properties, which are discoverable even by the taste. Fern yields potash in quantity sufficient to form a lye for washing. Upon the washed ashes in the cup, pour a little muriatic acid; a considerable hissing (effervesence) will take place. The solution will contain muriate of iron and muriate of lime: the effervesence is occasioned by the escape of carbonic acid gas. Prussiate of potassa will detect the iron; and subsequently carbonate of potassa or soda, will precipitate the lime, in the form of a milk white powder. Second—The remains of the ashes, may now be washed till free from flavour, and tested by a few drops of diluted sulphuric acid; and if the vessel be subjected to a boiling heat for an hour or two, a little alumine will often be taken up, and more iron. Finally, the substance remaining, which cannot be acted upon by the two powerful acids, must be considered siliceous, or of the nature

of sharp sand. I do not describe the method of effecting these trials, having already done so in the last article upon the *Analysis of soils*. I have detected every one of these staple earths, in the ashes which collect by burning common cigars; also in those of a bread-oven, heated by furze and common faggots. How wonderful that the pure, limpid, tasteless sap of the plant, should be converted into the elements of the soil! I say the elements, for who could venture to assert that any plant, living and growing, endowed with the vital principle, contains, *de facto*, the substances of charcoal, flint, clay, chalk and iron? Many are apt to assert that, the products of analysis must exist ready formed in the vessels of plants; but this is repugnant to the evidence of the senses; and contrary to assured fact; a being endowed with life, is one whose structure and organization qualify it to fulfil its alloted part in the scheme of Creation. But when life becomes extinct, it is made subject to the play of chemical affinities; and then, it affords substances which are the result of decomposition. Terms are wanting to convey a clear idea of what has been effected: in fact we are obliged to confess our ignorance; and, therefore, it is only safe to conclude that, the *Elements* of the new products resided in the plant. I was lately much struck by the reperusal of an article in the first Vol. of the *Horticultural Register*, p. 347, upon *the Native Soil being changed by the application of manure produced from land of an opposite nature*, by Mr. S. Appleby; and I extract the following paragraph.

"The sub-soil of my friend's kitchen garden is a hard rock sand, and the surface-soil formerly consisted of light sand, with the most trifling admixture of loamy earth, being such as commonly abounds in the vicinity of that extensive forest." (Sherwood.) The manure for his garden was carted from his clay farm, and was used unsparingly for two or three seasons, during which period, the soil gradually changed from the light sand I have mentioned, to a loamy consistence. He has continued to apply the same kind of tillage from the stable or fold yard of the clay farm, to the present time, and the original sandy soil of his garden, now approximates to the clay soil of his farm. I beg to observe that the tillage referred to was applied in a rotten state, and had no appearance of being impregnated with any particle of clay, but consisted entirely of ordinary manure, the produce clay land."

Many considerations of importance are involved in the fact thus detailed. Was the manure really farm-yard dung with straw?—if so, was that straw produced solely on the clay farm? Were weeds from the land,—such as the couch-grass of the field, made use of—if they were, much of the adhering soil must have been carried to the heaps. Other questions of the like import might be brought forward; and all such facts demand, and really merit very close investigation. I know, and have spoken, that weeds when decayed, and manuring substances when reduced to mould, contain chalk, pure clay, and silex, but I am much inclined to believe that, though a soil, whatever be its native quality, tends to reduce all manuring substances to its own constitution, it may by the introduction of the produce of lands of a totally different character, become ameliorated, and permanently changed. This remark leads at once to the second inquiry—namely—the mode by which *vegetable food is prepared*.

Lands of different qualities require peculiar and suitable applications of manure. There are some rich lands of a close, aluminous,

unctuous texture, which, if well supplied with manuring substances, and left uncropped, are found, after many months, to have retained those substances unconsumed, and in considerable abundance. Other poor soils, replete with sharp sand,—and, with great propriety, termed hungry soils,—speedily reduce and decompose whatever is added to them. But in general, manures are found to be rapidly reduced by vegetable crops; and though the colour of the land becomes darker, the bulk of the dung is found to be removed. Crops, therefore, act upon manure, and they are rich or poor, vigorous or sickly, in proportion as manures are supplied in due or deficient quantities, and of appropriate quality, or the reverse. It may be a question, whether a plant is a being endowed with sensitive life, and a power of perception, whereby it is enabled to seek for, and select food which is applicable to its peculiar constitution; or whether it is a mere organized body endowed with a vital principle, which simply stimulates it to the performance of sundry functions. The theory I advocate presumes the latter; it supposes that every vegetable is a being furnished with an organization, which qualifies it to be a prime electric conductor; that its vessels are duly acted upon by atmosperic electricity in the form of light, and become thus the most efficient of intermedia between the fluids of the air and those of the soil: that all nature, the air, water, earth or metallic oxides, are replete with light, which is the grand and universal cement, the sole agent of all the natural phenomena.

Under this view, the decomposition of water, of vegetable and animal substances, of salts, metallic oxides, and of gaseous fluids, are processes of electric disturbance. When, therefore, a plant produces, and absorbs sap, I presume that a peculiar energy is excited, primarily by the agency of the principle of light, either direct from the Sun, or by that which lies masked or concealed in the air. This, while it stimulates the vital functions within the plant, and developes its leaves and buds, passes to, and equally stimulates the protruding roots; furnishes them with a kind of galvanic power, which acts upon the water, and other decomposable bodies around those roots. Hence, the decomposition of the manuring substances, the separation of the carbon, the hydrogen, the oxygen, &c. &c.; and the formation of that peculiar nutritive matter the sap, which it appears like simple water, is nevertheless, a substance, *sui generis*, wholly inimitable by the art of man.

The theory, therefore, is founded upon the primary agency of solar electric light; it presumes that the plant is thereby stimulated to prepare its own food; during which process, it effects the decomposition of manures, and reduces them by a slow but certain progress, to the native staple earths of the ground. Earths absolutely without manures are almost inert; but these are of very rare occurrence, all are more or less supplied with a portion of vegetable matter; still, however, where the land is taxed by heavy cropping, and where it requires melioration, manuring substances must be supplied in proportion; and these are acted upon and reduced, by a process tantamount to that of a slow combustion. Oxygen, and hydro-carbonous compounds are abstracted; and chalk, alumen, silex, gypsum, oxides of iron, (perhaps, of manganese also,) are added to the soil.

I believe it is admitted by all, that manures are decomposed in the soil, and become the food of plants by yielding carbonic acid to the aqueous fluid in the proximity of the roots. The theory now advo-

cated differs, in fact, but little from that which has heretofore been sanctioned; yet, there is one point which, I doubt not, will be sturdily disputed: viz. the stimulating energy of *Electricity*; or more correctly speaking, of *that pure Etherial fire which lies concealed throughout all matter*. I have referred to this grandest principle of life and developement, in a former article; and now repeat my firm conviction, that light, primarily derived from the Sun, embues the air, and is the sole cause of the repulsion (if that word be admitted for want of a better,) of the aerial particles; that water, and all matters within the earth's surface owe their form and modes of combination to certain definite proportions of this fluid; and, therefore, that it is the sole origin of all electric, galvanic and chemical action, however these be secondarily excited or rendered manifest.

Electricity has, I believe, been but very imperfectly understood: as an agent in vegetation, the learned Dr. Lindley says,—It is a power of which we know almost nothing certain, with reference to vegetation; if many things have been written about it, it must be admitted, at least, that very little has been proved." *(Outline of First Pr. of Hort.* p. 8.) Something, however, begins to be known, and much has *now* been proved. I have stated my hypothesis, and as *authority* is of great moment on some occasions, I venture to refer, to a work which has recently been presented to me, by the author himself. In Dr. Faraday's *Experimental Researches in Electricity* from the *Philosophical Transactions*, we find the following statements.

**One grain* of water acidulated to facilitate conduction, will require an electric current to be continued for three minutes and three quarters of time, to effect its decomposition; which current must be powerful enough, to retain a platina wire of $\frac{1}{10^{4}}$ of an inch in thickness, red hot, in the air, during the whole time;"—"it will not be too much to say, that this necessary quantity of electricity is equal to a very powerful flash of lightening. Yet we have it under perfect command; can evolve, direct, and employ it at pleasure; and when it has performed its full work of electrolyzation, it has only separated the elements of a single grain of water." After reasoning upon the data furnished by certain recited experiments, the writer adds.

"This view of the subject gives an almost ovewhelming idea of the extraordinary quantity or degree of electric power, which naturally belongs to the particles of matter; but it is not inconsistent in the slightest degree, with the facts which can be brought to bear on this point."

I refer now to one experiment,—thus—"Two wires—one of platina and one of zinc, each one eighteenth of an inch in diameter, placed five sixteenths of an inch apart, and immersed to the depth of five-eighths of an inch in acid, consisting of *one drop* of oil of vitriol, and *four ounces* of distilled water, at the temperature of about 60° of Fahrenheit, and connected at the other extremities by a copper wire eighteen feet long, and $\frac{1}{18}$th of an inch in thickness, yielded as much electricity in little more than three seconds of time, as a Leyden battery charged by thirty turns of a very large and powerful plate electric machine in full action."

My limits will not permit me to copy more; I can only add, that Dr. Faraday, by a comparison of facts, calculates that 800,000 charges

* Experimental Researches—Sixth Series, pp. 116. et seq.

of the aforesaid Leyden battery would be necessary to supply electricity sufficient to decompose a single grain of water, or to *equal the quantity of electricity which is naturally associated with the elements of that grain of water, endowing them with their mutual chemical affinity.*"

Now, my hypothesis has, from first to last, supposed that electricity is the sole bond of union between the constituents of all matter; and as electricity evolved by the decomposition of one substance can alone effect that of another, so when vegetable substances are decomposed in the soil, the phenomenon is effected by the electrising principle of light; and the results are the liberation of a given quantity of ethereal fluid, which accompanies and propels the sap thus formed into the spongioles of the roots.

The processes are those of a beautiful routine; the decomposition of one substance leading to the formation of another; and furnishing, in the subjects under inquiry, new developements to the plant, and staple earths to the soil.

Truly much mystery is still involved, but the facts assuredly discovered, furnish a well grounded hope that, with the advance of electrochemical science, new and still more important truths, will be revealed. and place the science of Vegetable Physiology, in a situation wherein its phenomena, may be referred to certain well defined laws.

At all events, if the vital principle remain unappreciable, we may reasonable hope that the decomposition of manures will be thoroughly understood; and great improvements in horticulture effected, as a natural and inevitable consequence.

Dec. 10, 1834.

On the Rotation of Crops on the estate of Holkham; by Frs. Blaikie, Esq.

[FROM THE CODE OF AGRICULTURE OF THE FIFTH EDITION, 1835.]

When an account is given of the rotation of crops in any particular estate or district, it is proper that the soil and situation should be described at the same time, so that the reader may be better enabled to judge of the propriety of the system. For instance, upon Mr. Coke's estate in West Norfolk, which is celebrated for its good husbandry, the soil varies from light dry sand. to strong loam, retentive of wet. But the greater part of the land is a friable sandy loam, naturally poor, but very productive, from being kept in a high state of cultivatation. The subsoil of the whole district is calcareous, and is called clay, marl. or chalk, according to its texture.

First Rotation.—The best, or first class of this land, is cultivated either upon the four course shift, or upon the four and six courses alternately, as follows:

The Four Course Shift.—1. Turnips well manured, and part of the crop eaten upon the ground, or turnips and mangle wurtzel, ("field beet,") in alternate ridges of four or more drills; the beet all drawn off, and consumed in the yards—and turnips eaten upon the ground. 2. Barley. 3. Red clover, mown once; the second crop folded, and eaten off by sheep—a fresh piece being set out every day. 4. Wheat.

The Six Course Shift.—1. Turnips well manured and part eaten on the ground. 2. Barley. 3. White Clover and mixed seeds. mown

once. 4. Pasture. 5. Peas. 6. Wheat with manure. Thus, in the ten years, the land received three dressings of manure, exclusive of the sheep fold; and produced two crops of turnips, two of barley, two of wheat, one of peas, one of clover hay, one of mixed grass hay, and one year's pasture. The four or six course shifts, taken alternately, are preferable to a constant repetition of four course husbandry, and should be adopted whenever a convenient opportunity occurs.

To a person unacquainted with the management of light arable land, and the use of rape cake, it will appear that the three dressings of manure here mentioned, exclusive of the sheep fold; are extraordinary high farming. But when the expense and speedy application of the manure are pointed out, the wonder ceases. Thus, the average price of rape cake, including the expense of breaking the same into a powdered state, has, in the last ten years, been about £5 10*s*. a ton, and that quantity is usually allowed to three acres of land; and suppose rape cake manure only is used, and three dressings given in ten years, the whole comes to eleven shillings per acre per annum. The expense of laying on the manure is a mere trifle. A common wagon carries enough for six acres at one load; and one man sows by hand, broadcast, three tons of rape dust in one day, with which he covers nine acres, and for which the usual pay is one shilling a ton or four pence the acre. The Holkham horse machine, for sowing rape dust broadcast, is more expensive than the hand process; but it spreads the manure more regularly, and is more expeditious. It is particularly calculated for large farms.

Second Rotation.—Cropping for the second class of land.

A Four and a Five alternate Course Shift.—The occupier uses his discretion in having any particular part of the farm in a four course, and other parts in a five course, so that, "on the whole, he has not, in any one year, more than four-ninth parts of the said arable lands, under crops of corn, grain, or pulse."

The four crops on land of the second class, are 1. Turnips well manured, and all or nearly all the crop eaten upon the ground. 2. Barley. 3. Red clover, mown once, the second crop sheep folded, and if a weak crop, the stubble is mucked, or oil caked for the succeeding crop. 4. Wheat.

The Five Course.—1. Turnips well manured, and all, or nearly all the crop eaten upon the ground. 2. Barley. 3. Mixed grasses, mown once. 4. Pasture. 5. Wheat with manure. In the nine years, the land is manured three or four times, exclusive of the sheep fold: and produces two crops of turnips, two of barley, two of wheat, one of clover hay, one of mixed grass hay, and one year's pasture.

Two year's grass layers upon light land, are liable to be stocked with wire-worms. Where that misfortune is apprehended, it is adviseable to *reeceballk* the land in preparation for the wheat crop. The reece-balking, or rib-balking, is done soon after midsummer, and is performed by a common wheel-plough with a broad-winged share. The land is only half broken; the turf or flag in the alternate rib, being skimmed off about two inches deep, and thrown flat on its back, the grass side down upon the unbroken ground. The effect of this practice is, that the wire-worms and grubs creep to the outsides of the ribs, and are eagerly picked up by the rooks. Those sagacious, useful birds, are generally in close attendance whenwire-worms and other destructive insects are plentiful.

There is no loss in pasturage, from reece-balking two year's layers upon light land. The spring feed is eaten off before the ground is broken, and the grass grows vigorously afterwards, from the sides of the furrows in the ribs, and produces more good sheep feed than if the turf had not been disturbed. In the autumn, the broken turf is harrowed across the ribs, and drawn into the spaces from whence it was cut. The turf on the unbroken ground is also tendered, or half rotten by that time, from the broken turf having laid upon it, and thence excluding the air. The ground is then manured all over, generally with rape cake *in cobble*, and in the proportion of about a ton to three acres. The ground is immediately ploughed at the usual pitch, considerably deeper than the reece-balking, and the broken turf effectually covered. The wheat seed is thus drilled in at a proper season.

When wheat is sown on light land, upon two year's *alland*, or layers unbroken, it is apt to suffer in winter, not only from the depredations of wire-worms, but also from the frost heaving up the turf, and breaking the roots of the plants. Rolling and treading are good preventives.

Third Rotation.—The third class of land is thus cropped.

The Five Course.—1. Turnips well manured, and all the crop eaten upon the ground by mixed stock; the treading of neat cattle, along with the sheep, in such cases, is greatly beneficial to very light land. 2. Barley. 3. Mixed grasses pastured. 4. Pasture. 5. Wheat highly manured, or oats without manure.

Fourth Rotation.—There is a fourth class of light land in West Norfolk, still inferior, which is occasionally cultivated, and at other times used as sheep pasture and rabbit warrens. That land, when broken up, is usually pared and burned, and sown with rape for the first crop. 2. Rye or oats. 3. Turnips well manured, and all the crop eaten upon the ground by mixed stock. Other food being given to the stock at the same time, in cribs and troughs placed on wheels, and frequently shifted upon the turnip ground; a most commendable practice, and peculiarly suitable for all poor light soils. 4. Barley, well seeded with white clover, narrow-leaved rib grass, and other permanent grasses. 5. Pastured, and so continued for a series of years, until the moss plants overcome the grasses; when the ground is again broken up, and undergoes a course of aration as before.

In the description here given, of the various rotations of cropping and manuring, no mention has been made of the application of calcareous substances. On that subject, it is only necessary to observe, that an intelligent and attentive farmer does not require a chemical analysis of the soil, to direct him when calcareous manures ought to be applied. Experience, founded on common sense is his unerring guide; he knows that the cultivated soil requires a dressing of calcareous matter, when he sees his crop become proportionably more productive of straw than of corn. When the straw, particularly that of barley, becomes soft and feeble, or as it is called, "lazy," and bends down, and the knuckles under the weight of the ear—when the scythe in mowing, rather breaks than cuts it—also when the land shows an unusual disposition to produce annual weeds, such as the corn, marygold, &c, these are certain indications, that the cultivated soil is deficient in a due proportion of lime. The subsoil dressing is usually laid upon wheat stubble, in preparation for turnips; also, upon two year's layers, in preparation for wheat, and sometimes upon young

clover, immediately after the barley is carried off, and the harvest is over.

Select List of Fruits for planting a Kitchen Garden; by MICHAEL FLOY, Jun. *Nurseryman, New-York.*

[FROM THE AMERICAN GARDENER'S MAGAZINE.]

Gentlemen,—In reply to "An Amateur," desirous of obtaining a list of the most suitable apples for a kitchen garden, I will give a few hints, the result of some years' experience; this is necessary in every branch of gardening, but in that which relates to the growing of different kinds of fruit, what to retain and what to reject, it is every thing. Of the American apples we are certain; and if we hear of a kind in high esteem, we may without hesitation adopt it: this is not true with respect to many varieties of foreign origin, and which bear a high character in the English pomological works. The American apples send forth shoots of a vigorous growth, of a dark glossy appearance; many of the English apples in this country send forth feeble wiry shoots, of a copper coloured appearance, leaves crumbled under the influence of an American sun. They may be said to grow, and that is all. Whether they will ever repay the labour of raising, or for the room assigned to them, is in my opinion very problematical. It, may, therefore, not be unacceptable to give first a list of those apples which I have found to fall under the above character. In this list I regret to place the deservedly universal favourite among the English, the golden pippin: but in the subsequent list, there will be found the Ribston pippin, the Franklin's golden pippin, the Hawthornden, the Sam Young, the Cole apple, and many others, in nearly as high estimation as the golden pippin. The list is as follows:

Cornish aromatic,
— gilliflower,
Court pendu,
— of Wick,
Golden noble,
Gravenstein,
Hubbard's pearmain,
Longville's kernel,
Margil,
Pippin English golden,
— Downton,
— Sugarloaf,
— Wormsley,
— Crofton,
Royal Stubbard,
Yellow Ingestrie,
Red —

The annexed list contains sorts proved to be good; those marked * are foreign, and have succeeded well, though not quite as well as the American. Those marked in addition thus † have proved fully equal to the American sorts, and are well worthy of a general cultivation throughout the country.

SUMMER FRUIT.

* Borovitsky,
*† White Juneating,
* Red —
* Oslin,
*† Red quarenden,
Early Harvest,
*† Spring grove codlin,
Summer golden pippin,
*†Early Alexander,
*Early red Margaret.

AUTUMNAL FRUITS.

* Bere court pippin,	Fall pippin,
* Franklin's golden do.	Hoary morning,
*† Padley's pippin,	*† Golden Lexington,
* Wyker do.	* Hawthornden,
*† Cole apple,	* Transparent codlin.
Æsopus Spitzemburg,	

WINTER FRUIT,

* Barcelona pearmain,	*† Ross' nonpareil,
* Lamb Abbey, do.	* Brassick's do.
*† Fearn's pippin,	Newtown pippin,
*† Norfolk beaufin,	*† Ribston do.
Rhode Island greening,	Bellflower,
* Sam Young,	* Male Carle.

CIDER.

Harrison,	* Coccagee,
* Red Styre,	*† Foxley,
*† White do.	Campfield.

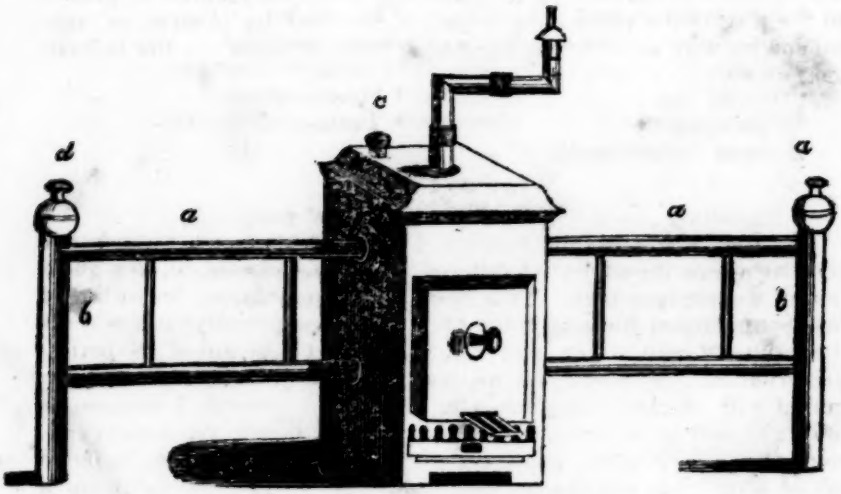
In a future communication, I may say something respecting the selection of cherries, having paid considerable attention to them.

Respectfully, yours,

MICHAEL FLOY, JUN.

Harlem Nursery, Aug. 4th, 1835.

For the above excellent list of fruits, our correspondent, whose query was inserted in our last, as well as all our readers, must be exceedingly indebted to Mr. Floy. His experience has enabled him to ascertain the true character of all the varieties he names. We have no doubt but he will find many cultivators of fruit in this vicinity, who have with regret, like himslef, discovered that the "glorious golden pippin," as many of our transatlantic friends have termed it, will not bear its loads of glittering fruit under our clear sky and scorching sun. Indeed, in Britain, it is no longer that universally cultivated and deservedly admired fruit, it was fifty years since: it has degenerated from its original excellence, and this degeneracy has been a subject of much discussion among those who have professed a considerable knowledge of vegetable physiology, and at the head of which may be named the intelligent President of the London Horticultural Society. It was at one time, in fact, supposed by many cultivators, that it would be lost to the English gardens for ever. Proceeding upon the idea, which Mr. Knight considers a true one, that all varieties of fruit have but a short existence, this would have been naturally supposed, but it has been doubted by some, and the cause of its failure to produce the golden pippin of former years, ascribed to improper treatment, and undue attention to its cultivation. In Mr. Floy's list of uncertain kinds in our climate, is also placed that beautiful fruit, the Gravenstein, and which is so highly rated in foreign pomological works: the court of Wick pippin, court-pendu, and several others, which make such a brilliant appearance, figured in the Pomological Magazine. It is to American apples that we must look for varieties that will repay the cultivation: let them be improved as the English have improved theirs and no fear need be apprehended that our gardens will not shew to every lover of this noble fruit, a more numerous and finer selection of apples, than any other country can produce.—*Conds.*



Description of a portable Hot-water Apparatus for heating Rooms or Conservatories; by Mr. JOSHUA MAJOR.

[FROM THE LONDON GARDENER'S MAGAZINE.]

THE apparatus may be made of tin or copper; the latter, though of course it would cost more at first, would, owing to its durability, no doubt, be the cheapest. Charcoal is employed for heating the apparatus: oil lamps have been tried instead of it, but with not near so good an effect. As it is necessary to employ pipes to conduct the effluvium, arising from the charcoal, out of the place required to be warmed, it will, in order, to secure all the heat possible, be of importance to introduce a sufficient length to allow the whole heat to pass off, before the ends of the pipes are turned to the outside. In order to make the smoke conductors suitable for any situation, it is only necessary, in addition to the elbow-pipes, to be provided with several lengths of straight pipes, placing one elbow upon the permanent smoke conductor connected with the fire, and the other at the extremity, or midway of the piping, as it may be required. The larger sized apparatus could not well be more than eight feet long; for, if larger, it would be inconvenient to move about. The size of the one which appears the most useful is as follows: The whole height of the centre portion of the apparatus, comprising the boiler, &c. is 15 inches, and width, 5¼ inches, by 7½ inches; the fire-pan is 5¾ inches, by 4½ inches, and 3½ inches deep; surrounded on three sides by a boiler half an inch in diameter, which becomes more spacious upwards, as the fire place diminishes. The opening necessary for the reception of the fire-pan, and for supplying it with fuel, is 6 inches wide, by 5½ inches deep; at the top of this opening the fire-place commences tapering; consequently the water in the boiler expands more immediately over the fire; the smoke pipe takes its regular width, 1½ inch, in the boiler, about an inch below where the lid unites; the horizontal water pipes *(a)* fig. are each 28 inches long, by two inches in diameter; the end pipes *(b)* are 14¼ inches, by 3 inches diameter; a feeder *(c)* is added, in case it should be thought better to have the lid fixed tight on the boiler. In order to promote the circulation of the water small holes are to be perforated in the top of the lids *(dd)* which are

also intended to be fixed tight. The apparatus may either be placed on the floor of the place to be warmed, or raised by bearers, or suspended by wire or cord, the two latter methods assist the fire to burn more freely.

Cisterns.

[FROM THE CULTIVATOR.]

Mr. Buel.—In the June number of the Cultivator, was published a short article on the subject of cisterns, in reply, as declared, to a question of a correspondent. Your readers, may, perhaps, be willing to take some farther hints upon the same subject, especially such as know the value of rain water, and would know the means of its perfect preservation. Although the method of building cisterns there suggusted will, in many instances, be entirely successful, I propose to offer a reason or two, founded not only upon theory, but some experience and observation, to shew that cisterns thus built are liable to fail of answering the desired end: and also, to give the outline of a new plan of constructing them, now fairly tested, that is calculated to avoid the defects of many kinds of cisterns differently constructed, and to lessen the expense of construction.

To build a brick cistern to contain about 40 barrels, the walls of which shall be laid in common lime mortar, with an inside face or plastering of water lime, the expense in this neighbourhood would be as follows. That it may be of the abovementioned capacity, it must be built about six feet deep and six feet square—or contain 216 cubic feet. To construct the walls of such a cistern, the thickness of which shall be the length of one brick, are requisite about

3,500 bricks at $4, - - - - - -	$14 00
20 bushels of lime, at 2*s*. - - - - -	5 00
Two loads of sand and drawing, at 3*s*. -	0 75
One barrel of water-lime for facing, at 10*s*. -	1 25
Mechanic for building 4 days, at 12*s*. - -	6 00
Tender for building 4 days, at 6*s*. - -	3 00
Materials for covering and curb to draw water,	2 00
	$32 00

No calculation is here made for digging the pit, as this must vary with the soil and situation, and be nearly alike for all kinds of cisterns of the same capacity.

This is the cheapest way, perhaps, of making a brick cistern, the wall being the thinnest practicable; but it will be seen that cisterns having walls of double thickness, (which are frequently made, and are by some considered cheapest in the end,) would cost nearly double the above account, which expense is a great obstacle in the way of the general use of cisterns, in obtaining one of the greatest comforts, not to say luxuries of life, an abundance of pure rain water.

And the bricks extending quite through the wall, as in case of the thinnest wall, I do not believe it could be made to hold water by any means without facing, there being so many crevices under the bricks, occasioned by the settling of the mortar from underneath them when the wall is constructing; then the dependence for holding water must be upon the water lime facing, and this is very uncertain, for a

slight frost, and frequently a few months' standing and use will cause such a facing to cleave off from any other substance than may be plastered or faced by it; and this facing being necessarily so thin, it is often the case, that for one or another of these causes the cistern cannot be made to hold water. In the vicinity of this village there have been made many cisterns of stone and water-lime in various methods, and this has been done for many years. But an improvement made by two respectable mechanics of this place, about two years since, has superseded every other plan attempted among us, and reduced the cost to a sum that any householder can afford, for the certainty of enjoying the common use of rain water. They have procured a patent for the improvement, but there is no secret in the operation of constructing their cisterns. A false curve is made of staves that fasten or link together in some way, and this is set up like a tub in the pit, which is dug in a well form, that is circular to the proper depth, and about one foot in diameter larger than the curve, and after placing the curve in the pit, the space between it and the bank or earth is filled with fragments of stones, cobbles, brick-bats, cinders, or almost any hard material crumbled into pieces of four inches or less diameter; a quantity of water lime is then mixed with sand in the usual proportions for making mortar, but of a consistency of gout or puddle, and the compound poured into the space. It runs through the whole to the bottom, and fills all the crevices and the entire vacuum left between the curve and the earth. When this becomes set, as they term the partial induration of the mortar, the curve is removed, and the wall while yet in a green or soft state, is faced or smoothed, and the bottom made with nearly the like materials. It is then covered and completed, and in a few days is fit to receive the water.

Now there is no quick lime used in the construction, which obviates one difficulty abovementioned, there is nothing to conduct the water through the wall to make it leak, no stone or other substance extending through it. It soon becomes hard as stone, and must endure, with proper care to guard against frost, (which will break rocks,) as long as time. Cheapness and utility are great desiderata of this age of improvement. This cistern is certainly equal, if not superior to any other ever made for holding and preserving the purity of rain water; and one constructed six feet in diameter and the same depth, holding about 35 barrels, costs here $15 to 17. Besides, the builders warrant them to hold water; and all know who are acquainted with the nature of hydraulic cement, that when it once holds water for a short time, it is forever. Indeed, out of 200 cisterns and reservoirs that have been built upon the "pattern curve" plan, not one as I have heard has failed to hold water from the time of its completion hitherto.

The expense of this kind of cistern it must be perceived, is comparatively small, and that will of course vary according to the price of water lime where it is used—a cistern of the last named dimensions requiring about three barrels in all. They must be made with equal convenience of any shape or size, and the proportional expense is diminished in building large reservoirs. I have a cistern built upon the old plan, with a thick stone wall, of about 35 barrels capacity, that cost $40. I have another built upon the "pattern curve" plan of the same capacity, and most perfectly finished, that cost about $15. They are both good cisterns, and I do not hesitate to use the water, (when conducted into them clean,) for family purposes, cooking, &c. And I think I could give some good reasons, why it is better for

such uses than spring water of this limy region. But this may, perhaps, be done hereafter.

Yours,

A FRIEND TO IMPROVEMENT.

Note.—To know how much a cylindrical or circular cistern of given dimensions will hold, multiply one-half the diameter into one-half the circumference, and that product into the depth, or the square of the diameter into the decimal, 7854—which will give the number of cubic or solid feet. By statute, one cubic foot of distilled water weighs 62½lbs., and ten pounds makes a gallon, so that multiplying the number of cubic feet by 62½ and dividing by 10, will give the gallons.

Chittenango, Aug. 12, 1835.

Oil from Corn; by W. G.

[FROM THE GENESEE FARMER.]

ALMOST every person is aware that the kernel of maize, the common Indian corn of our country, contains oil, yet few, we imagine, have ever heard that it can be collected in such quantity as to become an important article of domestic economy and traffic. We have lately had an opportunity of examining and testing the qualities of this new kind of oil, and certainly find it in many respects a most superior article. What we have seen was made at Howell's distillery in the town of Tully, in the south part of this county, (Onondaga,) and has been principally used for lamps, though we have no doubt it will be found extensively useful, wherever the finer qualities of oil are required. We have not witnessed the mode of preparing it; but understand that the oil rises on the surface of the vats or tubs used for mashing, and is taken off previous to the distillation of the liquor. To procure the oil, it is necessary, we learn, that the corn should be alone used, as the addition of other kinds of grain, such as rye, &c. lessens the quantity, or destroys it altogether. About a pint and a half is the average yield from a bushel of corn meal, and as the loss of it does not in the least affect the quantity or apparently the quality of the whiskey produced, that amount of oil may be considered as clear gain to the operator, it selling quickly at 8 to 10 shillings per gallon. After being dipped from the surface of the vats, it is separated from all impurities by a careful rectification; and when thus prepared is of a rich amber colour, tasting like the finest nut oil—burns with a pure brilliant flame, without smoke, or those disagreeable, not to say noxious exhalations, that render most kinds of lamp oil such a nuisance in a dwelling. In consumption, the corn oil is at least equal in durability to others; and during the cold season it remains fluid at a much lower temperature than the ordinary oils, which is a decided advantage. In speaking thus favourably of the new oil, we have no intention of advising our friends to build distilleries for the purpose of procuring it; but if those who persist in conducting these manufactories of drunkards, would save the oil produced in their operations, it might be bringing a small good out of an immense evil; certainly it would be the means of evolving light from the thick darkness which has settled over distilleries, from the just frown of public opinion.

W. G.

Influence of the Moon.

[FROM THE LONDON HORTICULTURAL REGISTER.]

In considering the climate of tropical countries, the influence of the moon seems to be entirely overlooked; and surely, if the tides of the vast ocean are raised from their fathomless bed by lunar power, it is not much to assert that the tides of the atmosphere are liable to a similar influence; this much is certain, that, in the low lands of tropical countries, no attentive observer of nature will fail to witness the power exercised by the moon ever the seasons, and also over animal and vegetable nature. As regards the latter, it may be stated, that there are certainly thirteen springs and thirteen autumns, in Demerara, in the year; for so many times does the sap of trees ascend to the branches and descend to the roots. For example, *wallaba* (resinous tree, common in the Demerara woods, somewhat resembling mahogany,) if cut in the dark, a few days before the *new moon*, it is one of the most durable woods in the world for house building, posts, &c.; in that state attempt to split it, and, with the utmost difficulty, it would be riven in the most jagged unequal manner that can be imagined; cut down another wallaba (that grew within a few yards of the former) at *full moon*, and the tree can be easily split into the finest smooth shingles of any desired thickness, or into staves for making casks; but, in this state, applied to house-building purposes, it speedily decays. Again—bamboos, as thick as a man's arm, are sometimes used for paling, &c.: if cut at the dark moon, they will invariable endure for ten or twelve years; if at full moon, they will be rotten in two or three years; thus it is with the most, if not all, the forest trees. Of the effects of the moon on animal life, very many instances could be cited. I have seen in Africa, newly littered young perish, in a few hours, at the mother's side, if exposed to the rays of the full moon; fish become rapidly putrid, and meat, if left exposed, incurable or unpreservable by salt; the mariner, heedlessly sleeping on the deck, becoming afflicted with nyctolopia or night blindness, at times the face hideously swollen if exposed during sleep to the moon's rays, the maniac's paroxyisms renewed with fearful vigour at the full and change, and the cold damp chill of the ague supervening on the ascendency of this apparently mild yet powerful luminary. Let her influence over this earth be studied; it is more powerful than is generally known."—*Martin's History of the British Colonies.*

On the Atmosphere.—An astronomer at Viviers has for some time been occupied in investigations on the subject. He states, among other results, that under lunar influence the barometer rises from the period when the moon is at 135 degrees from the meridian, towards the east, the period when, having passed the meridian, it has retrograded as far as 90 degrees, towards the west;—that according to these observations, the moon weakens the barometrical pressure, so that the atmosphere would be much heavier, if the moon did not exist.—The following are some further observations on this subject. During the last twenty years, the number of wet days at the new moon, was 78; at its first quarter, 88; at full moon, 82; at the last quarter, 65; at the nearest distance to the moon, 96; and at the greatest distance from it, 84.—*Athenæum.*

Farm School.

[FROM THE NEW-YORK FARMER.]

We copy the annexed article from the New-England Farmer, and cannot refrain from expressing our fervent desire that something of the kind might be adopted in this and other cities, as there are always more or less boys who are destitute of that care which is so essential to their welfare and well being.

Farm School on Thompson's Island.—On the 9th inst. we had the pleasure of joining a large party of respectable inhabitants of Boston, in an excursion to visit the *Boston Asylum and Farm School.* The steam boat General Lincoln, gave us a rapid and pleasing conveyance to one of the islands in Boston harbour, called *Thompson's Island*, in which the above named seminary is situated. This steam boat is a delightful vehicle, and won its way with a swift and easy progression among the isles and promontories which diversify and adorn as fine an expanse as ever presented a vase to the majesty of Neptune, or a mirror to his queen, Madam Amphitrite.

A little past 9 A. M., we were landed at a wharf recently constructed by the founders of the establishment, and were conducted by Capt. Chandler, the Superintendant, to a large and commodious farm house. This is of brick, standing in an elevated site, from which is a beautiful and romantic view of the outer and the inner harbour, as well as a picturesque country bordering on the water, and presenting various forms of beauty and sublimity. The pupils of this school amounting to fifty-six were assembled in a large hall, in a neat but plain uniform dress, and exhibited as pleasing a collection of "happy faces" as we recollect ever to have seen. When we mentally contrasted the situation and prospect of these boys with the wretched and desperate condition from which they were rescued by the charity of the founders and patrons of the Farm School, we could not but wish success to the humane efforts of the latter; and that they might long live and prosper, enjoying the happiness of being the means, under Providence, of rendering others happy and useful in their day and generation, instead of paupers and criminals, which without the helping hand of charity they could scarcely have failed of becoming. The pupils of the institution are taught reading, writing and arithmetic, and particular care is taken as well of their moral and physical, as of their intellectual education.

The visitors, by invitation, walked over the farm, which consists of about 140 acres. This is naturally a good soil, and the quantity and quality of the produce is increasing under the skilful management of Capt. Chandler, who appears to have been *born a farmer, and brought up a rural economist*; and a better man for the station he occupies, we believe could not be found in the Union. Hoping to obtain a particular statement of his improvements both in progress and in anticipation, we shall say nothing about them till we can realize our wishes on the subject.

The visitors were presented with handbills containing "*The First Annual Report of the Directors of the Boston Asylum and Farm School.*" By this it appears that "The proposition for a Farm School, for the more extensive rescue of idle and morally exposed children in our city, grew out of the fact, that the Asylum for Indigent Boys,

which has long been one of our favourite and most valued charities, was intended principally for orphan boys; that it did not and could not extend its charge to vitiated children of twelve or fourteen years of age; and that it could not give employment to any of the children under its care: and that our House of Reformation, a municipal institute, receives, and can receive none except those, who shall be convicted of legal offences and shall be sent to it by a court of justice. A number of gentlemen in the city were therefore very desirous that an institution should be established here, to which children already corrupted or beyond parental control, and greatly exposed to corruption, and of any age,—a surrender having been made of them by their parents or guardians,—might be sent without the intervention of a legal conviction and sentence: and in which such employments might be pursued by the children as would make the institution in the strictest sense a school of industry," &c. The proposed Farm School was afterwards united with 'the Asylum for Indigent Boys,' and "The institution in its present form will comprehend all the benevolent objects of the projectors both of the Farm School and the Asylum."

This institution, it appears to us, constitutes one of the most important links in the chain of charity. The boys who are admitted are not, like the inmates of the House of Reformation, stigmatized by vice and qualified by crime for receiving the benefits of the Asylum. Honest poverty here finds a refuge free from the contamination of evil communication, bad principles, and bad examples: and the little pupils are taught the most useful, healthful, and honourable of the arts, and thus qualified to become profitable and respectable members of society. It appears, however, by a statement made by Lieutenant Governor Armstrong, as well as by the "Report" above quoted, that the funds are not at present adequate to supply the wants and defray the expenses of the establishment on its present footing: a fact which, if generally known, would, we hope, elicit such donations from the wealthy and the charitable as would fully develope and beneficially employ its means of doing good.

Cob Meal.

[FROM THE CULTIVATOR.]

Jesse Buel:—Respected friend,—from the favourable observations of intelligent persons relating to the use of corn and cobs ground together as food for cattle, I have had a cast iron mill recently put up for the purpose of crushing them. Not having noticed any remarks on this subject in the Cultivator. I shall yet be glad to avail myself of the experience and judgment, as to the best mode of preparing and feeding such meal. I do not wish the pages of your useful paper occupied with that which is interesting only to myself or to a few of its readers; but if the use of the corn cob as food for cattle, is of sufficient general interest to give an article upon it, I, for one, shall be gratified to learn if it be better to grind them alone with the corn, or to mix oats in the hopper, should the meal be fed dry, or wet, separately, or mixed with cut hay, cut straw, or cut stalks; at what times and in what quantities?

A pretty extensive feeder for the Philadelphia market, once told me, that a bushel of meal made of corn and cobs, was quite equal to a

bushel of meal made of corn and oats, that his cattle throve as fast on the former, and that they never stalled (cloyed) on it.

With much respect, thy friend,

R. WHITE, JUN.

Shrewsbury, (N. J.) June 27, 1835.

In confirmation of the great economy in *preparing food* for animals, one of the aldermen of New-York city told me, that at their public bard, (where the previous year they had fed out hay and oats whole,) by the cutting of the hay and grinding the oats 8 bushels of oats and 15 cwt. of hay fed the same number of horses, doing the same work, the same length of time, and kept them in as good order, as 34 bushels of oats, and 35 cwt. of hay had done when fed whole!!

R. W. Jr.

Remarks of the Conductor.—The cobs of corn undoubtedly contain much nutriment. P. Minor, of Virginia [see American Farmer, Vol. i. p. 324,] has given us the results of a nicely conducted experiment to ascertain the amount of this nutriment. He took ten bushels of corn and cob, weighing 367lbs. and ten bushels of shelled corn, and subjected them to the process of distillation. The product of the corn and cob was 13 gallons of spirits, and of the pure corn 18 gallons. Estimating that the ten bushels of corn and cob would have given five bushels of shelled corn, which is the general proportion, there will be left, as the product of the five bushels of cobs, four gallons of spirits, or nearly half as much as was afforded by five bushels of corn. Mr. Minor remarks that the cob affords other nutritive matter than the saccharine, which is converted into alcohol, as mucilage and oils. We have besides abundant testimony, in the practice of eminent farmers, of the utility of feeding cob-meal to animals, always mixed, we believe, with meal of the corn or oats. Cob-and-corn-meal are improved by scalding; still more, for hogs, by boiling, with potatoes, apples and pumkins; and yet more by a partial fermentation. All these preparations facilitate digestion. An animal high fed with raw grain, whether horse, hog or ox, voids much of its food in an undigested state, which is of course lost for all beneficial purposes. Grinding grain for animal food, therefore, is universally admitted to be economical, and cooking and partially fermenting it, it is no less true, further enhances its value for swine. Even the water in which it is cooked augments its nutritious properties, in consequence, probably, of some chemical change effected by the boiling operation. Fish subsist on pure water, as is strikingly illustrated in the management of the gold fish. The experiment of the Rev. H. Colman, in fattening swine, further warrants this operation. "At first," says this nice observer, "we employ half a bushel of Indian meal to make a kettle full of hasty pudding; but we soon found that a peck of meal, by taking up all the water it could be made to absorb, in a thorough boiling, would make the same kettle full (holding five pails) of sufficient consistency." In giving cob-meal to horses and neat cattle, that are fed with cut hay or straw, there is an undoubted advantage, at least so it is stated by those who are well experienced, in feeding the grain and hay together. The grain, especially corn, is sometimes too heating to horses, and this tendency is counteracted by the stimulus of disten-

tion, afforded by the hay and straw. Mixed feed of this sort may be fed thrice in 24 hours. It is eaten in so short a time as to afford much beneficial rest to the animal. We would call the reader's attention to the facts stated in Mr. White's postscript.

To Cure Hams; by P.

[FROM THE GENESEE FARMER.]

In a late number of the *Genesee Farmer*, an inquiry was made as to the mode of curing Virginia bacon.

It has been thought that the superiority of Virginia hams is owing to the free use made of corn in fattening the hogs, and to their being permitted to run at large until nearly the time of slaughtering them. Under this treatment, not perhaps the most economical, the animal fibre acquires a firmness and solidity which is an important object in making good bacon. Another desirable object is, that the pigs be not too large, from 150 to 200 pounds being a very good weight.

Supposing then that these requisites exist, and that the pigs have been fed on new corn for four or five weeks previous to butchering, the following directions will probably be found sufficient to insure bacon of excellent quality. On every joint spread a teaspoonful of pulverized satpetre, and rub well with fine salt; then put a plentiful supply of salt on the fleshy side, and lay the pieces away compactly on a platform or any other convenient place. After the pork has lain in this situation for four or five or six weeks, according to the temperature of the weather—the colder the longer—the mass should be broken up, cleansed of the salt by scraping, and securely hung in the meat house to be smoked. The smoking must be continued until the outside of the hams become dark and sooty. The common practice in Virginia is to kindle a fire every morning for two or three months, and sometimes longer, which may readily be kept burning in a half smothered state during the greater part of the day. The bacon merchants keep their fires up night and day for eight or ten days; but their hams are much inferior to those made in private families, where the process is more gradual, and the heat inconsiderable.

In order to secure the bacon from the skipper fly during the summer, it should be taken down in the spring and packed away in hogsheads with unleached ashes, using the necessary precaution to place a few corn cobs between the pieces to prevent their coming in contact with each other. The ashes will also have the effect of greatly improving the flavour of the bacon.

Under this simple management, I have no doubt as good hams may be made in New-York as in Virginia. In addition, I would respectfully suggest, that in order to have the favourite Virginia dish in perfection, the cook should be directed to boil the ham and cabbage in the same vessel, and serve them up together, so that he latter may be fully seasoned by the essence of the former. P.

Goochland County, (Va.) July 27, 1835.

PART III.

MISCELLANEOUS INTELLIGENCE.

Carolina Prunes.—Mr. PICKENPACK, of Spartanburgh District, So. Ca. has succeeded in curing the common Plum of the country, as Prunes, and left specimens with the Editor of the *Charleston Courier*. If Mr. Pickenpack will persevere in his enterprise, it may become profitable, as some will prefer *native* to foreign fruits.

County Agricultural Societies.—The *young States* of Ohio and Indiana are setting a noble example to their elder sisters, in making legislative provision for the establishment of County Agricultural Societies. In the latter, a State Board of Agriculture is established, which we perceive by papers of that State, is actively engaged in the organization of County Societies.—*Ten. Far.*

Agricultural Warehouse, Boston.—The Agricultural Warehouse, Boston, is an establishment extending from North Market-street to Ann-street, containing four rooms, 90 feet by 40, and all filled with Agricultural implements, seeds, and various patented articles; it is a complete museum, in which is deposited every thing that is new and useful to the cultivator, and which every farmer ought to make it a point of visiting whenever he happens to be in Boston.—*Silk Manual.*

Italian Rye Grass.—We regret to say, does not promise to abide our winters, though we think it probable it will do well as far north as Pennsylvania, and perhaps, New-Jersey and south New-York, which may be considered about as cold as the districts in Germany, where it is known to flourish. Dr. Beekman, of Kinderhook, sowed some seed in the spring of 1834. It had an uncommon fine appearance in the autumn, but he has not been able to discover a spear of it which has survived the winter. The same was the case in our experiment.—*Cultivator.*

Mildew on Grapes.—A gentleman of this village, who takes much interest in these things, informs us that he has discovered a *sure* remedy for mildew upon grapes. The mildew has been the great bane to the success of growing the more tender but delicious kinds of grapes in this quarter, and even the much prized Isabella suffers more or less by it. The gentleman abovementioned, says, that he last year discovered that his grapes began to mildew badly, that he had formerly tried sulphur and other remedies without success, and that he made the experiment of applying strong *soap suds* with a syringe to a few bunches, and these came to maturity, plump, smooth and fair, while all the rest upon the same vine were so badly mildewed as to be unfit for use. Should this simple remedy prove effectual, our courage will again be revived in cultivating this delicious table fruit.—*Fredonian Censor.*

Mangel Wurtzel.—We would recommend those farmers who have commenced raising crops of mangel wurtzel to test its efficacy as food for milch cows, in order that they may judge for themselves of its great advantages. As a further inducement, we here give an account of an experiment performed by the Editor of the American Farmer, and published two years ago in that work. He says, "In October, our best milch cow began to fail in her milk, and we cut an armful of the tops of the mangel wurtzel for her; this seemed to have a good effect, and it was repeated night and morning for a week, when she fully recovered her usual supply. The leaves were then withheld, and she immediately failed again in her milk. At that time her full quantity was about twelve quarts a day, and when the mangel wurtzel leaves were withheld, the quantity she gave was only about six quarts. She had good pasture, with an excellent stream of water in it, and plenty of salt during the time; but at that season the grass does not afford sufficient nutritive matter.

"After another week we began giving her the roots of the mangel wurtzel, cut small, and occasionally sprinkled with shorts or corn meal, and a little salt; one peck of the roots given thus had the same effect on her milk that the tops had; and we suspended these a week, to try their effect the more certainly. The result was as above stated, a conviction that mangel wurtzel is the best and most profitable root we can raise for milch cows."

In those countries where mangel wurtzel is extensively cultivated, the practice of cutting off the leaves for cattle is generally pursued, and is commenced even as early as the latter part of summer. After cutting, the leaves very soon grew out again, so as to admit of being cut every fortnight. Such frequent removal of the leaves must, however, when performed so long before the maturity of the root, be at the expense of the crop; but when done later in the season, the advantages of so excellent food for cattle, would probably far more than counterbalance any injury it may then occasion.—*Gen. Far.*

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Corn for Seed.—When corn is husked, it should be put in long narrow cribs, so constructed as to admit of a free circulation of air throughout. This will prevent the injury in the quality of the grain from mustiness which is so frequently caused where it is too much secluded from the air. Selecting corn for seed should claim the particular attention of the farmer. The largest ears, from the most productive stalks, are those which are in all cases to be preferred. A selection of this kind for several successive years has been found to improve the grain so much as to increase the product to a very considerable amount, besides adding to its quality. Those who wish to have full and even crops, should preserve four or five times the usual quantity for seed, so that it may be planted thickly, and afterwards thinned to the requisite distance. This is of great importance where there is a probability of the young plants being destroyed by insects; as the greater the number of plants, the greater will be the probability of a part escaping. Fields thus planted the present year have yielded in most cases full crops; while others which were planted with the usual limited quantity only, have frequently been more than half destroyed. Another advantage of this method is, that in thinning, the most thrifty plants may be suffered to remain, while others of inferior growth are removed.—*Ibid.*

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Teasels.—This at present is one of the most profitable of crops. There is a crop to be gathered this fall on three or four acres of what was Mr. Gogwell's garden, said by competent judges, to be worth $3,000. We are told that many farmer's in Hatfield, have gone into the cultivation of it. The scarcity of the article is the main cause of its present high price. A few years since it was so low as to be hardly worth raising, and the probability is that there will soon be an abundance to supply the market.—*Maine Far.*

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Prospects for Silk.—Niles' Register, a paper of great authority in such matters, states that the manufacture of silk in this country within five years, will probably be worth from ten to twenty millions of dollars, and of course give employment to a vast number of women and children.—*Ibid.*

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Anthracite Coal Ashes.—The Philadelphia Horticultural Society has awarded to Mr. John A. Snyder the premium for the best assortment of fruits. The account states that the fruit consisted of Peaches, Nectarines, and Green Gage Plums, produced within the city and in an unfavourable situation. Mr. Snyder had been in the habit of placing ashes of Anthracite Coal about the roots of his fruit trees, and to that circumstance he attributed their preservation from the attacks of insects. Col. Carr stated that he had practised the same for two years past, and that it seemed to afford effectual protection from those insects which attack the roots. *Silk Cul.*

MONTHLY CALENDAR
OF
HORTICULTURE AND FLORICULTURE
FOR DECEMBER.

VEGETABLE GARDEN.

Peas.—About the middle of this month you may venture to sow some Peas to succeed those planted last month. The early Carleton Pea seems to be the most hardy. Towards the end of this month, you may also sow Marrowfat. Where

you wish to economize space in your garden, you may plant cabbages between the rows of your peas. For directions about the mode of planting, see last month. The Marrowfat, which grows very tall, should be planted wider apart from row to row, than the other kind, say 5 feet, and require sticking after they have come up about 4 inches above the ground. Let your Peas, sown last month, have a little earth drawn up to their stems; and if the situation is much exposed, it would be well to shelter them from the Northern and Western winds, by sticking branches of pine around the beds.

Beans.—The winter Beans, as they may be called, the hardy Magazon and Windsor Beans, may be planted this month with some prospect of success, as in this climate they are not usually injured by frost. They should be planted from two and a half to three feet, from row to row, and 4 or 5 inches from each other in the row. You may hoe the Beans planted last month, drawing up in a dry day some earth around their stems.

Cabbages.—The Early York and Sugar Loaf Cabbages, which were sown early in October, will now be fit to transplant in the beds. The Early Yorks may be planted in rows about 2 feet from row to row, and a foot and a half from each other. The Sugar Loaf may be planted 2 feet every way. Where Cabbages, planted this month, are well manured, and carefully managed, they will produce fine heads in April.

Cauliflowers.—We have observed that most of the Cauliflowers sown last spring, have been destroyed by the rains in September; indeed, it is very difficult in this climate to succeed with the Spring Cauliflower.

You may now plant out Cauliflowers, sown in October, let them be managed in every respect like the larger varieties of Cabbage; and if the frosts of winter are not too severe, and you take a little pains in sheltering them during our coldest weather, they may produce moderate sized heads in the spring. We, last year, made an experiment with the Cauliflower, in which we were pretty successful. After having planted our Irish Potatoes in rows; the Potatoes having been laid on the surface, strewed over with litter, and then covered with earth, formed a tolerable protection to the Cauliflowers planted between the rows.

The Cauliflowers which were put out in July and August, will be now preparing to head. It is a good protection to surround them by bands of hay or straw, care being taken that these are not drawn too tightly; by this means your plants will not only be protected from the frost, but the heads be whitened and appear attractive to the eye.

Radishes.—This as well as almost every month in the year, is suitable for sowing Radish seeds. In fact, in this mild climate, the Radish may be sown at any time. For direction, see those given in former months.

Lettuce.—Towards the end of this month you may sow Lettuce seed. Let the seeds be sown pretty thick and even, and in case of a frost they should be sheltered with pine and evergreen bushes.

Spinach.—Keep your beds of Spinach clear from weeds; let them be frequently hoed and thinned to within 4 inches of each other. In using Spinach, be careful in taking off the larger leaves not to injure the heart of the plant. With due caution, a bed of Spinach will last a family a whole winter.

Onions.—The onions planted out in former months, should be kept free from weeds, and the ground be frequently stirred, as this will greatly promote their growth. It is not yet too late to set out new beds of Onions.

Carrots.—Towards the latter end of this month you may sow Carrot seed; the European kind are least likely to run to seed.

Celery.—On a dry day earth up your Celery with great care, lest the earth fall into the heart of the plants and greatly retard their growth.

Artichokes.—If the artichokes were not dressed last month, they should now be attended to. For directions see last month.

Ground Artichokes—(Helianthus tuberosa) This vegetable, which has been too much neglected, may be dug this month. It is used for pickling, and is also of a pleasant taste as a vegetable boiled and mashed with butter.

Asparagus.—If you neglected, in the last month, manuring and dressing your Asparagus beds, let them be no longer neglected; your success with this vegetable next spring, will, in a great measure, depend on your fall dressing.

FRUIT GARDEN.

This is a proper time to prune Peach, Nectarine and Apricot trees. Remove all useless shoots, leaving the prime and bearing ones at proper and regular distances.

Pruning Vines.—Great precaution should be used in pruning Grape Vines. There is a great difference of opinion with regard to the proper mode of doing this; the usual plan is to head down young vines, the first year to within three eyes of the old,—the second year within 5 or 6. Old Vines should be shortened to within 2 or 3 eyes of the old wood; by this means young and fruitful shoots will be produced for the coming summer.

Planting of Vines.—At any time this month you may plant out Grape Vines. The young plants of not more than two years old are to be preferred. They should be set out 5 or 6 feet from each other, in holes 3 feet wide, and 18 inches deep.

PLANTING FRUIT TREES.

This is a favourable month for planting Peach, Nectarine, Apricot, Plum and Pear trees. We have usually trees imported from the South of France to succeed better with us than those from the North. The gardens of Mr. Mey and from Mr. Michel, have produced very choice fruits trees imported from France.

Raspberries.—You may transplant young shoots of Raspberries at any time in in this month, and with proper management will bear fruit next spring.

Strawberries.—It is not yet too late to set out Strawberry Plants; but let the work be no longer delayed. For directions see last month.

FLOWER DEPARTMENT.

There is not much to be done this month in the Flower Garden, except the triming and removing of Shrubs, the cleaning away weeds, and protecting those plants that are likely to be injured by frost.

PLANTS, NATIVE AND EXOTIC, THAT BLOOMED IN NOVEMBER.

A slight frost, in the early part of November, destroyed the bloom of our native plants; here and there a Gentian, which the frost had spared, presented its beautiful blue flowers. We have seen a few Pear and Cherry trees in *unseasonable bloom.* Of exotic flowering plants and shrubs the *Chuysanthemums,* of an almost infinite variety, have been in great perfection. The tea, and other variety of Roses, are in flower in many of our gardens. The *Japonicas* are beginning to open, the *Poincianas* are in flower, in many of our gardens. We have seen the *Cactus Fruncatus* and *Flagelliformis* in full blossom, and a *Hibiscus,* of which we can find no description in any of our botanical books, from seeds sent from the East-Indies, and of a very beautiful kind, has for the first time bloomed with us this season.

In addition to the above, it is asserted, that the Guava, the Malaga Fig, the Dwarf Lime, a bunch of Grapes, three varieties of Pepper, have all perfectly ripened; and that even green Peas and *new* Irish Potatoes, have been sold in our market.

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